NavMed P-369

UNITED STATES NAVY

# MEDICAL NEWS LETTER

Vol. 40 Friday, 7 December 1962 No. 11

## TABLE OF CONTENTS



A THOUGHT FOR TODAY - REMEMBER PEARL HARBOR!

MEDICAL NEWS LETTER

Vol. 40 Friday, 7 December 1962 No. 11



## Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

* * * * * *

## Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

* * * * * *

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

# Homonymous Hemianopia *

## A Review of One Hundred Cases

J. Lawton Smith MD, Durham, North Carolina. Amer J Ophthal 54:616-623, October 1962.

Quantitative perimetry is a clinical examination essential to proper evaluation of the neurologic patient. To emphasize the fundamental role of quantitative study of the visual fields in topical neurologic diagnosis, the following review of 100 cases of homonymous hemianopia is presented.

### Material

One hundred cases with homonymous visual field defects were selected for review from records of patients seen in neuro-ophthalmologic consultation over two and one-half years. Criteria for selection were: (1) visual field examination must have been done by the author in each instance, (2) the defect must have been present at the time of examination, and (3) the patient had to be examined at both the perimeter and tangent screen (confrontation fields alone were insufficient). Conventional tangent screen technics were used and an Aimark projection perimeter was employed for peripheral field examinations. It should be noted that a common cause of homonymous field defects, ophthalmic migraine, was thus eliminated from consideration for, although many migraine patients give vivid histories of hemianopias, it is infrequent for these defects to be present at the time of the perimetric examination. The cases considered are primarily those which would be seen in consultation by an ophthalmologist.

Records were analyzed for the following data: age, sex, race, chief complaint, duration of complaint, visual acuity, visual field findings, measurements of palpebral fissures and pupils, optokinetic responses, ophthalmoscopic findings, ophthalmodynamometry, neurologic findings, results of arteriography and encephalography, surgical findings, histologic corroboration, follow-up and final diagnosis.

The visual field findings evaluated included: congruity, incongruity, splitting of fixation, sparing of fixation, defect denser above, defect denser below, importance of color technics, perimeter of greater value, tangent screen of greater value, and perimeter and screen of equal value in detecting hemianopia.

### Summary

Pursuant to the author's examination and review of these 100 cases of homonymous visual field defects, he reaches the following conclusions:

* From Division of Ophthalmology, Duke University School of Medicine. This study was supported in part by U. S. Public Health Service Grant 81-1656.

Temporal lobe lesions produce one-fourth of the cases of hemianopias. They usually occur in a younger age group and are about equally distributed between males and females. Such field defects have ominous significance since the most frequent etiologic lesion is a neoplasm; the tumor/vascular ratio was 9: 1 in this series. These field defects are typically incongruous and are usually found more readily at the perimeter than the tangent screen. The 3/330 red isopter on the Aimark projection perimeter is at times quite helpful in their detection. These lesions are associated with a normal, symmetrical, optokinetic response, unless parietal lobe extension has occurred.

Parietal lobe lesions produce one-third of the cases of hemianopias, and occur in an older age group. The incidence appears to be slightly greater in males than females, probably reflecting the greater number of vascular lesions in the male group. The ratio of tumors and vascular lesions is about equal. The optokinetic nystagmus sign is of great help in these cases; there were 28 instances of a positive optokinetic nystagmus sign. Not a single case of parietal lobe hemianopia showed a normal optokinetic response. There is no question but that parietal lobe lesions can exist in the presence of a negative optokinetic response, but if the lesion is deep enough to produce hemianopia, the optokinetic response is invariably asymmetric. This series confirms Kestenbaum's data regarding this finding. Parietal lobe field defects are detected with equal facility on the perimeter and tangent screen. Such defects are denser below 3: 1 as often as they are denser above. They split fixation in each instance in this study, with no sparing noted with parietal lobe disease.

Occipital lobe lesions are the most common cause of hemianopia, producing two-fifths of the cases. They are more frequent in males than females (28: 11 in this series). The average age was 50 years, definitely older than in the temporal lobe group. The etiology of an occipital lobe field defect is just the opposite of that of temporal lobe lesions for vascular lesions are more frequent than tumors by a striking degree, 3: 1 in this study.

The optokinetic sign is usually negative in the presence of an occipital lobe field defect. Cogan's rule was evaluated in this study. This states that in the presence of an occipital lobe field defect, a negative optokinetic nystagmus sign points to a vascular lesion, but a positive sign points to a tumor or mass lesion. There were seven positive optokinetic responses in this series of occipital lobe lesions. There were seven positive optokinetic and two arteriovenous malformations—in each instance a mass lesion was present. Cogan's rule, thus, was found to be of great clinical value.

Occipital lobe field defects are found more readily on the tangent screen than the perimeter, due to the frequency of paracentral defects. They are congruous and, interestingly, are denser above 2: 1 as often as below. Usually they split fixation (3: 1 over sparing). Posterior cerebral artery occlusions usually split fixation rather than spare it.

A very important point concerning vision in the presence of hemianopia should be stressed. Homonymous hemianopia does not explain a reduction in visual acuity! Thus, a patient can see 20/20 with one-half of the macula. In every instance, without exception, in the entire series the visual acuity was

within normal limits in each patient with hemianopia, unless cause for the reduction in acuity was readily evident on routine ophthalmologic examination.

Division of Ophthalmology

The patients seen in this study were examined at the Massachusetts Eye and Ear Infirmary, Duke University Medical Center, and Durham Veterans Administration Hospital. Grateful acknowledgement is given to Dr. David G. Cogan for his help and encouragement and permission to see some of these patients. —Author

Reference: Kestenbaum, A.: Clinical Methods of Neuro-Ophthalmologic Examination. New York, Grune & Stratton, 1961, ed. 2.

* * * * * *

## The Etiology and Diagnosis of Vertigo*

Leslie Bernstein MD, Iowa City. Arch Otolaryng 76: 329-337, October 1962.

As otology continues to recover from the recession into which it allowed itself to be submerged by the advent of the antibiotic era, more attention is now being focused upon noninflammatory lesions of the ear. Interest in the system of equilibrium has been increasing in recent years, and there is, therefore, a progressive tendency to refer to the otologist those patients who complain of dizziness. This is only natural when we consider that the receptor organs of the vestibular system are housed in the inner ear.

The vestibular division of the statoacoustic nerve connects the end-organs with the vestibular nuclei on each side of the brain stem in the floor of the fourth ventricle. From here the vestibular fibers are connected with the nuclei of the cranial III, IV, and VI nerves through the medial longitudinal bundle as well as with the vagus (Fig. 1). Fibers also connect these nuclei with the cortex of the temporal lobe. There are further connections, through the vestibulospinal tract, that lead to the muscles of the neck, trunk, and limbs.

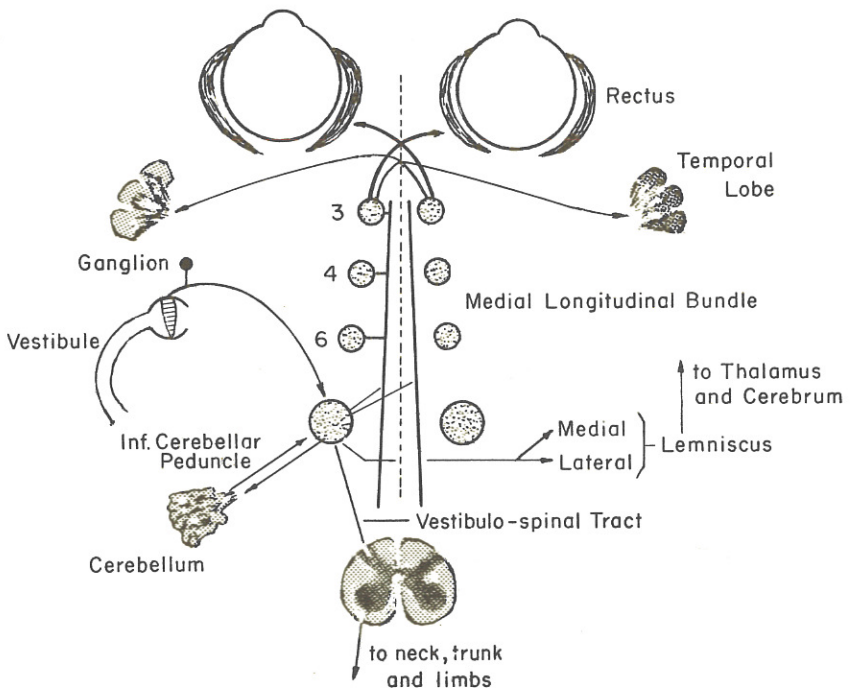
The vestibular system, with all its central and peripheral connections, effects a continuous adjustment of the body musculature in response to acceleration, including that due to gravity. Normally, this bilateral system is constantly at work, receiving signals and passing them on to regulate posture, movements of the body, limbs, and eyes. Conscious perception of this vestibular activity occurs rather rarely, and then only in association with disease

* From the Department of Otolaryngology and Maxillofacial Surgery, University Hospitals, Iowa City. Based on a paper presented at the Annual Meeting of the Iowa Academy of Ophthalmology and Otolaryngology, September 14 and 15, 1961, at Okoboji, Iowa.

or abnormal stimulation, such as motion sickness or certain tests of vestibular function. This abnormal perception is manifested as vertigo, and this is the only symptom of vestibular dysfunction.

One of the universal difficulties of vertigo is its definition. To us, vertigo implies a hallucination of movement. That is to say, the senses of the patient are deceived into feeling himself move or else into seeing abnormal movement of his surroundings. Accompanying this there may be a reflex tendency to counteract this apparent movement which may result in loss of equilibrium. Anything outside of this, such as faintness or weakness in the head, syncope, or nausea, cannot be accepted as synonyms of vertigo.

Fig. I. – Diagrammatic scheme of central connections of vestibular nuclei.




## Incidence of Vertigo

A rough idea of the frequency with which vertigo is encountered as a prominent symptom will be gained from Table 1 which shows the incidence of vertigo expressed in terms of patient-consulting rate per 1000 of the population in a group of 106 practices serving over 362,000 persons in England (Logan, W. P. B. and Cushion, A. A.: Stud Med Pop 14, 1958). This table certainly suggests that vertigo as a major complaint is common enough to deserve the attention and interest of every otologist.

## The Etiology of Vertigo

As long ago as 1893, Sir William Gowers found that in 9 out of 10 cases where vertigo was not obviously due to central causes, the symptom had been due to a morbid state of the labyrinth.

In the series at the National Hospital for Nervous Diseases, London, out of a total of 3116 cases of vertigo, 2391, or 77%, were of peripheral or end-organ origin.

TABLE 1.—*Incidence of Vertigo as Compared with other Disorders of Similar Frequency* *

| | |
|---|---|
| Duodenal Ulcer | 5.9 |
| Pneumonia | 5.8 |
| Vertigo | 5.0 |
| Rheumatoid Arthritis | 4.8 |
| Appendicitis | 4.0 |

* Per 1,000 general practice population, 106 general practices serving 362,829 persons.

TABLE 2.—*Peripheral Causes of Vertigo*

| | % | No. |
|---|---|---|
| Endolymphatic Hydrops | 71 | 1,701 * |
| Paroxysmal Positional Nystagmus and Vertigo | 11 | 266 |
| Vestibular Neuronitis | 9 | 227 |
| Infective | 6 | 145 |
| Streptomycin | 2 | 52 |
| Total | 100 | 2,391 |

* National Hospital figures.

Nevertheless, on being confronted by a patient suffering from vertigo, one of the most important things to do is to exclude the possibility of any disorder within the central nervous system. Whereas, all causes of vertigo originating within the labyrinth are not serious as far as life is concerned, those causes within the central nervous system may well be serious to health, and indeed to life. The author, therefore, first of all considers the cases of vertigo originating from disturbances of the central nervous system. Though vertigo is a prominent symptom in these patients, often there are other features which indicate a lesion within the central nervous system. Furthermore, spontaneous nystagmus due to involvement of the central vestibular pathways in the brain stem may persist indefinitely, even though the vertigo may not always be in proportion to the nystagmus.

## Causes of Vertigo Within the Central Nervous System

Epilepsy. It is considered that any patient who loses consciousness during a vertiginous disturbance should be suspected of having epilepsy; this may be confirmed by electroencephalography which usually shows some focal activity in these cases.

Vertigo may occur as an aura in about 16% of epileptic cases, and as such, constitutes no diagnostic problem as it is followed by the typical features of an epileptic seizure. A vertiginous aura may precede petit mal, grand mal, or psychomotor seizures.

On the other hand, vertiginous epilepsy, though rare, is characterized by recurrent attacks of transient vertigo, accompanied by momentary loss of consciousness which is obvious to others, but unknown to the patient himself. There is no fall or other associated symptoms; often there is amnesia for the duration of the attack. The diagnosis is heavily supported by positive electroencephalographic findings.

Multiple Sclerosis. As its name implies, this disease speaks for itself, so that commonly there are other symptoms of central nervous system involvement. It is to be noted, however, that vertigo may be the first and, for some time, the only symptom in many cases of multiple sclerosis.

Vascular Accidents. If an intracranial blood vessel ruptures or becomes thrombosed, sudden vertigo may be an early feature, but is soon overshadowed by other more serious symptoms. In fact, a leaking aneurysm in the cerebellopontine angle may present symptoms resembling Ménière's Disease long before the true diagnosis is even suspected.

When the anterior inferior and posterior inferior cerebellar arteries become thrombosed, a definite syndrome may be produced due to involvement of the brain stem and the cerebellum. In addition to the signs of cerebellar injury, this usually consists of vertigo, and is often associated with nausea and vomiting, deafness, and tinnitus, as well as involvement of other cranial nerves, notably the facial. A homolateral Horner's syndrome and diminished sensation of pain, temperature, and touch may be elicited on examination.

Tumors of Posterior Cranial Fossa. These can give rise to marked and persistent vertigo which may be the only symptom for a time. It should be noted, however, that the acoustic neurinoma, which is by far the most common tumor of the posterior fossa, rarely has vertigo as its prominent feature. In children, the possibility of a cerebellar glioma should be borne in mind, and in later life, secondary neoplastic deposits, especially from a bronchial carcinoma.

Insufficiency of the Basilar Artery. This is an accepted cause of momentary spontaneous vertigo in elderly patients, and often there are no signs of a peripheral labyrinthine disturbance.

Peripheral Causes of Vertigo

Regarding peripheral cases, the intensity of the vertigo is invariably proportional to the nystagmus. In these cases of damage to the end-organ or to the peripheral vestibular neuron, spontaneous nystagmus usually diminishes in intensity and seldom persists beyond a few weeks, as its course is cut short by central compensation.

Endolymphatic Hydrops. It will be noted from the figures in Table 2 that endolymphatic hydrops (Ménière's Disease) is by far the commonest peripheral cause of vertigo.

This condition is often referred to as Méniere's Disease or Syndrome, after the man who first described its symptomatology in 1861. Histological evidence is available to suggest that this syndrome may be produced by a distention of the endolymphatic labyrinth within the inner ear. Seymour, basing his concept on experimental investigation, suggested that vascular spasm affecting the labyrinth was the primary factor responsible for this hydrops. In most cases, the disease is confined to only one endolymphatic system, but in 12% of cases it eventually involves the second ear as well. Ménière's syndrome commonly affects the 35 to 60 age group and has no sex preference. The most characteristic presentation is a sudden attack of vertigo lasting from several minutes to 2 hours, and which is frequently heralded by tinnitus and fullness in the ear on the affected side. The periods between attacks usually extend from 3 to 6 months, but may be shorter or longer, and may even last up to 10 years.

It is usual for both cochlear and vestibular components to be affected, but occasionally the brunt is borne mainly by only one, so that the initial presenting symptom may be either vertigo or deafness or tinnitus. When vertigo is the prominent feature, there is usually slight deafness or tinnitus. On the other hand, it is by no means uncommon to find deafness only without vertigo, but with mainly the low tones affected, and with the characteristic distortion of sound; the level of hearing frequently fluctuates, however. Such patients usually develop vertigo at some later date. It has been pointed out, however, that a positive recruitment phenomenon is invariable, due to dysfunction of the hair cells in the organ of Corti. Furthermore, there is a marked lowered discrimination for speech which is reduced out of proportion to the pure tone loss.

It is, therefore, not surprising to find that, in spite of a typical history, clinical tests may reveal no impairment of function. For this reason, it is believed that a good history is most imperative in all cases of vertigo.

Paroxysmal Positional Vertigo and Nystagmus. In this group, only by positioning the head may the abnormality be discovered, for all other vestibular tests may well be normal. This was shown by Cawthorne and Hallpike and by Dix and Hallpike to be due to a lesion of the utricle.

The patient will frequently give a history of recent head injury. The vertigo is inconstant, is usually induced by placing the head in a particular position, and only lasts several seconds—in most cases, the only symptom.

Vestibular Neuronitis. This condition of sudden failure of one vestibular end-organ was described and named by Hallpike in 1949. It is characterized by a sudden onset of severe vertigo, made worse with head movements. The attack usually affects early middle-aged subjects. The vertigo is more or less constant, but gradually subsides after 3 weeks, although vertigo may still be provoked by a sudden movement of the head. There is no accompanying deafness or tinnitus, and the central nervous system is normal. Canal paresis and directional preponderance may be the only residual sign, though all cases make a complete symptomatic recovery.

It is now generally accepted that the lesion is to be found in the vestibular nerve.

Infective. Infection of the middle ear may erode the bony labyrinth, causing vertigo. Evidence of a positive fistula test in a chronic otitis media indicates such a complication, which requires surgical intervention. Usually, these patients give a history of unsteadiness when walking.

An interesting feature in some of these cases is the so-called Tullio phenomenon, whereby the labyrinth is stimulated by a loud sound to the extent that the subject momentarily loses his balance.

Other forms of infective vertigo include the neurolabyrinthitis of meningococcal meningitis which is, unfortunately, bilateral, and mumps, which frequently affects only one ear.

The vestibular nerves may be involved in polyneuritis as part of the general syndrome, while in herpes zoster oticus (Hunt's syndrome) both components of the cranial VIII nerve may be affected.

Toxic. Streptomycin sulfate and calcium streptomycin have been recognized as having vestibulotoxic side effects since 1947. The dihydrostreptomycin, regrettably, was found to have a toxic affinity for both the vestibular and auditory systems.

It is now appreciated that some patients are so susceptible that vestibular function might be severely damaged after as little as 3 Gm. have been administered in the course of 3 days. It should be noted that this susceptibility is more pronounced in the presence of impaired renal function. Present policy of the author's Department is to give streptomycin only to seriously ill patients who cannot be helped by other means. They then endeavor not to exceed a daily dose of 0.5 Gm.

Kanamycin and neomycin have also been reported as having ototoxic properties. No doubt, as time goes by, there shall continue to be reports of other drugs with similar side effects.

## Investigations of Vertigo

Clinical manifestations of vestibular disease may be either spontaneous or induced. The spontaneous phenomena consist of vertigo, nystagmus, and ataxia. Induced phenomena consist chiefly of abnormalities of the reflex responses to stimulation of the vestibular end-organs.

At the State University of Iowa, all cases of vertigo are investigated by taking a careful history. A full otological and a neurological examination is carried out; caloric and positional tests are done, and electronystagmographic recordings are made. Of course, in addition to routine audiometric tests, when indicated, tests for the recruitment phenomenon, radiographs of the temporal bones, and electroencephalography are made available.

Caloric Test. The technic standardized by Fitzgerald and Hallpike is used. This method of performing the caloric test has the advantages of a standard repeatable stimulus, the results of which can be recorded accurately. The test can be performed in the office—all that is required is an examination table with an adjustable headrest, a douche can with tubing, and a thermometer. More elaborate equipment is available commercially. Briefly, the patient is positioned on a couch with the head elevated at 30 degrees — this brings the lateral semicircular canal into the vertical plane in which position its sensitivity is maximal. The Department uses water at 30 and 44 C. These temperatures are not uncomfortable and, being equidistant from normal body temperatures, they are calculated to bring about equal and opposite convection currents. The stimulus is applied for exactly 40 seconds and the tubing is so designed as to insure that at least 8 oz of water will flow into the external auditory canal. The patient keeps his gaze in the straight-ahead position on a spot marked on the ceiling and the after-nystagmus is timed from the moment the stimulus is begun until the end of the response.

In this article the author continues with an excellent discussion of a special graphic method of recording results of the caloric tests, including normal responses, canal paresis, directional preponderance, and combined lesions.

There is a section on optokinetic nystagmus and the use of the optokinetic drum in determining the presence or absence of directional preponderance. In the normal subject, the optokinetic (optomotor) pathways in one-half of the cerebral hemisphere are responsible for optokinetic nystagmus with its rapid component to the opposite side. Thus, in the presence of a lesion of a parietal lobe involving these pathways, there will be suppression of optokinetic nystagmus to the opposite side, while the nystagmus to the affected side remains normal; whereas, the directional preponderance of vestibular (caloric) nystagmus takes the form of prolongation toward the side of the affected temporal lobe.

With lesions of the cranial VIII nerve or labyrinth, canal paresis is often associated with directional preponderance to the opposite side. It is believed that this is due to a loss of tonic impulses originating in the otolith organs, probably the utricle.

Abnormal responses are encountered in about 90% of cases of Ménière's Disease, while in tumors of the cranial VIII nerve and in vestibular neuronitis, the incidence rate of abnormal responses comes close to 100%.

While canal paresis alone usually signifies diminished function of the semicircular canal tested, directional preponderance is often a valuable diagnostic and localizing sign of lesions of the vestibular connections within the central nervous system as well as of supratentorial lesions. In 1923, Dusser deBarenne and deKleyn indicated that such may be the case in a unilateral cerebral lesion, and that the directional preponderance is directed toward the side of the lesion. Later, Fitzgerald and Hallpike and Carmichael et al demonstrated that directional preponderance of caloric nystagmus toward the side of the cerebral lesion was a constant finding in subjects with lesions limited to the posterior half of the temporal lobe on the same side; whereas, directional preponderance of both caloric and optokinetic nystagmus was constantly found with lesions involving the posterior half of the temporal lobe as well as areas of the supramarginal and angular gyri. On the other hand, with lesions limited to the frontal lobe, the upper half of the parietal lobe or the anterior half of the temporal lobe, directional preponderance of either variety was consistently absent.

Positional Tests. Regarded physically, the otolith organs come within the category of linear accelerometers. Normally, they are subjected to the accelerations of gravity. They thus signal the orientation of the head in space, for their responses vary according to their inclination.

The test used at University Hospitals, State University, Iowa, is based on the one described by Bárány in 1921. It consists of turning the seated patient's head to one side and then briskly laying him supine so that his head is lowered some 30 degrees below the horizontal.

Two abnormal responses may be obtained:

1. If on placing the patient in the critical position there is a latent period followed by nystagmus, vertigo, and feelings of distress, this is termed paroxysmal positional nystagmus of the benign or peripheral variety. This nystagmus generally adapts rapidly and, if repeated after a short interval, it is seen only in a diminished form. After several successive attempts, it usually

disappears. When this test is positive, it is the lower utricle which is thought to be at fault.

2. In the other variety there is no latent period and no noticeable adaptation—the nystagmus appears as soon as the critical head position is assumed, and it continues so long as that position is maintained; it reappears as soon as the position is resumed. Its direction may change with alterations of head positions, and there usually are no accompanying symptoms. It has to be distinguished from an accentuation of an existing spontaneous nystagmus which may be temporarily increased by changing the position of the head. This is termed positional nystagmus of the central variety. Nylen showed that this was commonly found in deep lesions of the central nervous system within the posterior fossa, and Cawthorne and Hinchcliffe have demonstrated the association of this sign with cases of subtentorial metastases from unsuspected bronchiogenic carcinoma. It is considered that this type of positional nystagmus is due to a lesion of the vestibular centers in the cerebellum.

Whether the otolith system is affected peripherally or within its central connections, the occurrence of this nystagmus is very important, as it may be the only physical sign of organic disease not only of the vestibular, but indeed of the central nervous system.

* * * * * *

## Convulsions and Television Viewing

S. N. Pantelakis MD, B. D. Bower MD, MRCP, DCH, and H. Douglas Jones BS*, Department of Paediatrics and Child Health, University of Birmingham, and Children's Hospital, Birmingham. Brit Med J No. 5305 p's 633-637, September 8, 1962.

In England, 90% of children between 5 and 15 years live in households that have a television set. In the winter these children spend an average of two and three-quarter hours watching the sets. The television picture is produced by intermittent illumination. Because intermittent photic stimulation is a well known provocative method for producing epileptic discharges, it is surprising that only a few reports of television-induced convulsions have appeared. Many writers have discussed this phenomenon but each has described only a few cases. However, it is clear from talking to colleagues that such cases are not rare; in the past 2 years the authors have seen 14 children with this condition. In the same period, 243 children in the age range when exposure to television occurred (4 to 15 years) have been referred to the Electroencephalography Department (E. E. G.) with a diagnosis of epilepsy. This gives an incidence of television-induced epilepsy among epileptic children of 5. 7%.

The authors investigated these children by electroencephalography using the special technics of intermittent photic stimulation (I. P. S.) which they

* Exchange Scholar from the University of Kansas, 1960 - 1961.

described in the original article. The questions they have tried to answer are: (1) Is there a common factor in the E. E. G. of these patients which distinguishes them from epileptic children whose convulsions are not associated with television viewing? (2) Are there differences in the E. E. G. s within the group? (3) If so, are these differences related to any clinical differences?

The age range of the 14 children (6 boys and 8 girls) was 8 to 14 years. There was no suggestion of brain damage in the history of birth, neonatal period, or subsequent development. Physical examination was normal in every case. In only one child was there a family history of convulsions. Intelligence assessments were not carried out, but all children were attending ordinary schools and seemed of average intelligence, except one who attended a school for the educationally subnormal.

In 9 cases, convulsions occurred only while watching television. Six of these children had had only one convulsion. By contrast, one child had had eight convulsions—all since the family had installed a television set, and all while he was watching it. This child still insists on watching television, sitting about 2 feet from the picture. He is the subnormal child. The remaining 5 children have had some seizures under other circumstances. Television viewing was considered to be more than coincidental in these 5 children because they showed marked sensitivity to I. P. S. Moreover, 3 showed clinical evidence of sensitivity to flickering light; 2 had had their only major convulsions during television-viewing, while at other times the attacks had been minor; the third child had on several occasions felt giddy and developed a headache when he walked beside railings on a sunny day or looked at a fluorescent lamp.

The type of convulsion which occurred during television-viewing was grand mal in 13 cases and petit mal in one. Inquiries were made into the circumstances surrounding the convulsions, with particular reference to the distance of the child from the screen, whether the picture was normal of abnormal—that is, clear or blurred, steady or flickering—and, if abnormal, whether the child was adjusting the picture at the time. Seven patients were within 2 feet of the screen; of these, four were adjusting the set because the picture was abnormal, and 3 preferred to sit near the screen rather than at the usual distance.

Although, in most cases, parents were advised to limit television viewing by the child, in only one case did the parents make a serious attempt to do so. Eleven patients were treated with phenobarbitone; in 10 this has been completely effective in preventing further convulsions over the period of follow-up (3 to 31 months, average 13 months). The compulsive effect of television makes drug administration the only practicable treatment in most cases. Children readily take tablets two or three times a day, but are most unwilling to reduce their viewing time. Advice should be given, however, to look away, keeping the eyes open, if the picture becomes faulty, and at all times to sit at least 5 feet from the screen.

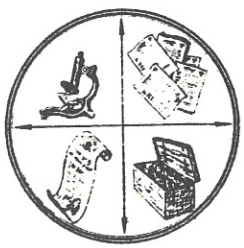
Thirteen children of the 14 who had had convulsions while watching television showed generalized wave-and-spike or polyspike discharges with intermittent photic stimulation. I. P. S. was applied with high intensity illumination

over a frequency range of 2 to 50 flashes per second, at the frequency of maximal response, with low intensity illumination, and with red, green, and blue filters.

From results of the tests, the cases could be divided into very sensitive and less sensitive groups. The very sensitive group consisted mainly of children whose convulsions occurred when sitting at a normal distance from a normally functioning television set; whereas, the less sensitive was composed mainly of children who were sitting very near the screen or standing near while attempting to correct a faulty picture.

Implications of these findings are discussed in terms of the significance of E. E. G. abnormalities, the significance of differences in sensitivity to photic stimulation, to the effect of eye-closure, and of color.

* * * * * *



# MISCELLANY

## THE NAVY-MARINE RESIDENCE FOUNDATION

### A Message from the Chief of Naval Operations

In March 1961, a new organization for Navy and Marine officers' widows, the Navy-Marine Residence Foundation, was incorporated in the District of Columbia. As many of you know, this Navy foundation is a private nonprofit organization established for the primary purpose of providing a residence in the Washington metropolitan area for our senior citizens who are widows of Navy and Marine officers who have served on active duty for 20 or more years of commissioned service. The residence, consisting of 250 to 300 units, also will be available to a number of retired officers and their wives, WAVE officers, Navy nurses, and women Marines.

The cost of this project, including land and furnishings for the public rooms, will be approximately $4,500,000. It will be necessary to acquire an initial amount of 500 to 600 thousand dollars in order to start construction. Federal Housing Administration procedures subsequently will make it possible to obtain mortgage insurance covering a long-term loan on our residence. Funds collected to date—about $55,000—have been acquired solely through the devoted and enthusiastic efforts of the ladies of the Washington Naval Officers' Wives' Club and sister clubs throughout the Service. These devoted ladies of the Washington area also have given unsparingly of their time and talents to provide secretarial and clerical help.

Acquisition of a suitable land site now is of primary importance and an intensive search of all promising areas within the Washington metropolitan area is under way. It is hoped that this matter can be resolved within the next few months so that a solid basis then will exist for the development of architect's plans.

No public or servicewide appeals to individuals for funds have been made. The Foundation would, however, most gratefully appreciate voluntary contributions in order that we might get the project under way. Officers' and Wives' Club projects are suggested as acceptable methods for raising funds for this worthwhile endeavor. Checks should be made out to the Navy-Marine Residence Foundation, Inc., and addressed to the foundation at Room 1206, Department of the Navy, Washington 25, D. C.

I most heartily endorse the Foundation and cordially invite the support of all our officers, active and retired, as we direct our efforts toward this intensive and challenging goal of helping to provide necessary security for our wives in the sunset of their lives.


* * * * * *

## Ceremonies at NMRI

The Naval Medical Research Institute at Bethesda celebrated its 20th Anniversary on 19 October 1962, and inaugurated a year of special programs designed to illustrate its past and future services.

Anniversary ceremonies began with a welcome from CAPT John R. Seal MC USN, Commanding Officer of the Institute , who emphasized the hope that by the end of this anniversary year the Navy and its operating forces would be better informed concerning the Institute and its potentialities.

The presentation of a plaque dedicated to the memory of the noted Aeronaut, LCDR Victor A. Prather Jr, MC USN (Deceased) was observed. The Institute was honored by the presence of LCDR Prather's widow and his son and daughter. On the day before, Mrs. Prather had received the Harmon Trophy awarded by President Kennedy at the White House in recognition of LCDR Prather's courageous achievement. CDR Malcolm Ross and Doctor Prather had set a manned balloon altitude record of over 21.5 miles on 4 May 1961, after which Dr. Prather drowned during recovery operations in the Gulf of Mexico. CAPT Henry G. Wagner MC USN, Executive Officer, and Head of the Aviation Medicine Division, Naval Medical Research Institute, unveiled the memorial plaque, and the Reverend Doctor Lloyd G. Brown pronounced the benediction.

Many distinguished speakers recounted the achievements of NMRI since its commissioning in 1942. Among them were The Honorable J. H. Wakelin Jr, Assistant Secretary of the Navy for Research and Development; RADM L. D. Coates, Chief of Naval Research; RADM E. C. Kenney, Surgeon General, and Chief, BuMed; and RADM Robert B. Brown, Commanding Officer, National Naval Medical Center. Other prominent guests were CDR Malcolm D. Ross and Jacqueline Cochran, both of whom had also received the Harmon Trophy at the White House on the previous day.

(A brief summary of NMRI's accomplishments will be presented in an early issue of the Medical News Letter.)

* * * * * *

## Joint Blood Council Dissolves

Council News Briefs, Joint Blood Council, Inc., No. 26, 19 October 1962. By Frank E. Wilson MD, Executive Vice President.

Having successfully achieved its major goal of coordination, the Joint Blood Council, Inc., is being dissolved.

Within the past seven years a national peacetime blood program of major significance has been worked out under the leadership of the Council. The impetus created by the Joint Blood Council's Member Institutions in this venture assures that blood and its derivatives will be readily available in the future for all who need them. In fact, the work of the Council has been carried out so well that coordination of the existing blood programs can now be realized without the existence of a separate corporation. Reports and policies distributed by the organization have been widely accepted. Plans are under way for each of the five component institutions to continue liaison of blood interests through advisory representatives who will meet occasionally.

Early in 1955, the American Medical Association joined with the American Red Cross, the American Hospital Association, the American Association of Blood Banks, and the American Society of Clinical Pathologists in forming the Joint Blood Council, a nonprofit professional service organization which was urgently needed to coordinate the existing national interests in blood. Since that time the Joint Blood Council has a remarkable list of accomplishments, some of which are enumerated below.

"It is astonishing that so much has been done in such a short time by and through the efforts and influence of the Council," said Dr. Gunnar Gundersen, the Council's President. He stated also that, "as a Past-President of the American Medical Association, I can assure you that we are proud of the part it played in forming the Council."

Other laudatory messages are being received at the Joint Blood Council's headquarters in Washington, D. C. These communications indicate a desire to continue the objectives and high standards established by the Council.

Accomplishments of the Joint Blood Council, Inc. Corporation formed in March 1955. Office established 1 November 1955 in Washington, D. C.

Encouraged the retention of industrial blood fractionation plants as a national defense measure.

Stimulated and advised on research, especially in relation to prolonging red blood cell life and elimination of infectious hepatitis virus from blood transfusions.

Maintained liaison with Federal, quasi-governmental, and other national agencies' blood programs.

Published and distributed three editions of "Standards for a Blood Transfusion Service," a basic document for accrediting blood banks.

Established, published, and distributed three biennial editions of a "Directory of Blood Transfusion Facilities and Services," the 1962 edition listing 4578.

Conducted the first comprehensive survey of blood handling institutions and published the findings in a report, "The Nation's Blood Transfusion Facilities and Services."

Surveyed all blood facilities and published the first authoritative national blood utilization and collection report.

Encouraged and served as catalytic agent for the establishment of a cooperative agreement between the American Red Cross and the American Association of Blood Banks for national exchange of blood and blood credits.

Surveyed and analyzed existing blood assurance programs.

Provided organization for arbitration of disputes between blood banks.

Designed and displayed an exhibit on the organization before many national conventions.

Created, published, and distributed approximately 35,000 copies of a Basic Criteria for Blood Transfusion and Transfusion Review Program.

Published a news bulletin, "Council News Briefs."

Encouraged a study of and published a report on Medicolegal Problems in Blood Transfusions.

## Federal National Blood Program - Summary Points

From: Council News Briefs, Joint Blood Council, Inc., No. 26 October 19, 1962.

(a) The National Blood Program, Statement of Basic Principles, has been revised with the Office of Emergency Planning (OEP) replacing the Office of Civil and Defense Mobilization (OCDM) throughout the document. No major changes were made. The Blood Subcommittee (Dr. W. D. Stovall, Chairman) of the Health Resources Advisory Board decided to continue its support of the document.

(b) Although the majority of civil defense responsibilities are vested in the Defense Department, the emergency health services and medical stockpiles including blood and equipment is the responsibility of the Department of Health, Education, and Welfare according to Presidential Executive Order 11001, dated February 20, 1962. The Secretary of HEW has delegated these and kindred responsibilities to the Public Health Service's Division of Health Mobilization.

(c) The Public Health Service plans to develop a projected three-year, time-phased, peacetime blood program. Because of the details involved in such a program, the Division of Health Mobilization has asked for a staff member to devote full time to the development of this program. At present, considerable assistance is being provided by an American National Red Cross representative to the Division.

(d) This Division of PHS has published in April 1962 a description and provisional list for Model-62 Civil Defense Emergency Hospital (CDEH). The new 200 bed hospitals will have a supply operational capability expanded to 30 days as compared to the 3 or 4-day capability of the existing Civil Defense hospitals.

(e) A new Military Blood Program Agency has been established in Washington by the Defense Department. The Army Surgeon General has been charged with establishing and operating the agency. It will be set up "to coordinate and integrate the plans, policies, and procedures of the military departments and the United and Specified Commands regarding the collection, processing, and distribution of blood and blood products for medical use in emergencies, . . ." The Director of the new Agency is Lieutenant Colonel Edward J. O'Shaughnessy MC, U.S. Army.

(LCDR Robert E. Meyers MSC USN has been assigned to the Military Blood Program Agency as U.S. Navy representative.)

* * * * * *

## Naval Medical Research Reports

U.S. Naval Medical Research Institute, NNMC, Bethesda, Md.

1. Freezing of Living Cells - Biophysical Considerations: MR 005.02-0001.07 Report No. 7, June 1961.
2. Natural Infection of Humboldt's Penguin with Plasmodium Elongatum: MR 005.09-1030.02 Report No. 5, June 1962.
3. Urolithiasis in the Rat. III. Effects of Proteins, Carbohydrate, and Phosphate on the Occurrence of Calcium Citrate Stones: MR 005.02-0001.09 Report No. 1, June 1962.
4. Interference and Its Elimination (Outside noise or undesirable signal in output of sensing and recording equipment used in biological research): MR 005.09-1401.04 Report No. 2, June 1962.

U.S. Naval Air Development Center, Aviation Medical Acceleration Laboratory, Johnsville, Penna.

1. Reversible Free Radical Generation in the Melanin Granules of the Eye by Visible Light: MR 005.13-0002.7 Report No. 18, October 1962.
2. Chronic Deficits of Temperature Regulation Produced in Cats by Preoptic Lesions: MR 005.13-1005.1 Report No. 27, October 1962.

U.S. Naval Medical Field Research Laboratory, Camp Lejeune, N.C.

1. Eaton Agent: A Review: MR 005.09-1204.4.6, September 1962.
2. The Newer Enteroviruses: MR 005.09-1204.4.7, September 1962.
3. Natural Reinfection of Adults by Respiratory Syncytial Virus: MR 005.09-1204.4.8, September 1962.
4. Multiplication and Cytopathology of Coxsackie A-21 Virus in Rotated and Stationary Tissue Culture: MR 005.09-1204.4.9, September 1962.
5. Studies on the Removal of Embedded Lone Star Ticks, Amblyomma Americanum: MR 005.09-0010.2.2, September 1962.

U.S. Naval School of Aviation Medicine, Aviation Medical Center, Pensacola, Florida.

1. Validity of Tests of Canal Sickness in Predicting Susceptibility to Airsickness and Seasickness: MR 005.13-6001 Subtask 1 Report No. 71, June 1962.
2. Mortality in Laboratory Animals Undergoing Explosive Decompression: MR 005.13-1002 Subtask 17 Report No. 2, July 1962.
3. A Study of Inference Behavior: MR 005.13-5001 Subtask 12 Report No. 2, July 1962.
4. Human Performance During Two Weeks in a Room Rotating at Three RPM: MR 005.13-6001 Subtask 1 Report No. 74, August 1962.
5. Subjective and Behavioral "Certainty" in a Male Population: MR 005.13-5001 Subtask 12 Report No. 3, August 1962.

* * * * * *

## From the Note Book

### Announcement of Discontinuance

### Correspondence Course

### NAVPERS 10701-A

Medical Department Officer Correspondence Course Atomic Medicine, NavPers 10701-A is discontinued. All personnel who are presently enrolled in NavPers 10701-A will be allowed to complete the course. Major revision of NavPers 10701-A is in process of preparation.

* * * * * *

Doctor Geves S. Kenny, U. S. Naval Intern, Receives Honor. The Bureau of Medicine and Surgery has learned that LT Geves S. Kenny MC USN, in June 1962, received the following award at the 76th Annual Commencement at Temple University School of Medicine, Philadelphia, Penna.

> "Student American Medical Association Award - A silver bowl presented by the Temple University Chapter to that senior student who, in the opinion of his fellow classmates, best represents the New Physician through his devotion to the healing arts, his ability in the management of clinical problems, his concern and consideration for the needs of the individual, and his leadership in the medical and civic community."

In recognition of the achievements of Dr. Kenny, the Surgeon General of the U. S. Navy, RADM Edward C. Kenney MC USN, forwarded to him the following letter:

> "I was very pleased to learn that you have received the Award of the Temple University Chapter of the Student American Medical Association. This is an enviable honor, inasmuch as it is awarded not only for ability but for devotion to the healing arts, for concern and consideration for the needs of the individual, and for leadership in the medical and civic community. The fact that the winner of the Award is selected by his classmates enhances the honor for you, I am sure, for there is no greater satisfaction for a physician than to achieve the respect and admiration of his colleagues. I offer my heartiest congratulations to you and wish you continued success in your medical career."

s/ E. C. Kenney
Rear Admiral MC USN
Surgeon General

Evaluation of Unexpectedly Large Radiation Exposures by Photographic Film, by William L. McLaughlin, National Bureau of Standards Technical Note 161, August 1962, 13 pages, 15 cents.*

National Bureau of Standards Technical Note 161 discusses ways of extending the useful range of photographic dosimetry beyond its conventional upper limits. This publication points out that it is sometimes important to recover photographic dosimetry data that might be lost in routine experimental practice due to the total radiation exposure being higher than the upper limit of useful range of the film. Conventional film types used in personnel monitoring film badges are suitable for measuring X- and gamma-radiation exposures only up to 1000 Roentgens.

This report gives results of studies at the National Bureau of Standards on the usefulness of several special processing technics for achieving this extension of dosimetry range. According to the report, it is possible to decrease film sensitivity and retain sufficient contrast so that some film types achieve useful ranges up to at least 10,000 Roentgens. Limitations in precision of readings due to changes in rate dependence, energy dependence, and changes in the shape of the characteristics curve in this range are discussed.

Other means of extending the useful range of film are discussed briefly, including use of supplementary emulsions of low sensitivity, developed silver analysis, and utilization of the print-out effect.

* NOTE: Order from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. Foreign remittances must be in U. S. exchange and should include an additional one-fourth of the publication price to cover mailing costs.

Eleven in Naval Unit, University of Colorado, Cited for Scholarship. LT Joan S. Shaw NC USN is one of eleven students at the University of Colorado who recently received citations as "Distinguished Students." The presentations were made by RADM Ira H. Nunn, Commandant of the Ninth Naval District with Headquarters at Great Lakes, Ill. LT Shaw was completing her studies at the University and received a B.S. degree.

According to CAPT Frank M. Hertel, Commanding Officer of the University Naval Unit, 200 midshipmen and nearly 100 active duty officers, enlisted men, and women of the Navy and Marine Corps are studying at the University of Colorado.

Naval Medical Research Reports Correction Notice. No's 3, 4, 5, 6, and 7 listed on page 21 of the Medical News Letter, Vol. 40, No. 8, 19 October 1962, were shown as originating in the U.S. Naval School of Aviation Medicine, Pensacola, Fla. These reports should have been listed under the heading of the U.S. Naval Medical Field Research Laboratory, Camp Lejeune, N.C., and are repeated under that heading on page 19 of this issue of the News Letter.

* * * * * *

# DENTAL SECTION

## The Challenge of Operative Dentistry

Lee A. Counsell,* B.A., D.D.S., Chelsea, Massachusetts. Jour Am Academy of Gold Foil Operators, May 1962.

To anyone seriously interested in the practice of operative dentistry,[1] it is disturbing to observe so many young dentists striving to avoid it. Who has not heard the derogatory expressions so often used to describe this vital area of dentistry, and has not blenched at the thoughtless disparagement and uncomplimentary connotations? The fact that these shopworn cliches are often glibly spoken in jest does not excuse or sanction them, least of all when spoken by dentists. No less grievous is the "short-cut" approach to restorative dental services, and with it the inevitable backwash of inadequate treatment, lost teeth, disgruntled patients, and disillusioned dentists. There is, also, the intramural discord exemplified by the wasteful ferment between the schools of the research minded, the so-called theorists, and those of the more technically oriented, each group viewing the other with misgivings and even disdain.

Why is it that the area of practice we know as operative dentistry is so often regarded as the "ugly duckling" of the dental family, the least honored, without a cognizant specialty board, abandoned by degrees for the established specialities by as many as have the wherewithal to do it? Is it that the body of knowledge in the field is not great enough to warrant a certifying authority, or that the spectrum of operative procedures is not sufficiently comprehensive, or is too simple, or is not sufficiently vital? Is it agreed that operative dentistry can be adequately practiced by any and all without benefit of serious or intensive postdoctoral study? The questions are rhetorical in a sense and yet they cry out for emphatic answers.

Assuming that the student was well motivated to begin with, which, unfortunately, is not always the case, the solutions lie largely in the quality of

*Commander, Dental Corps, United States Navy. From U. S. Naval Hospital, Chelsea, Mass.

1--The term "operative dentistry" is used in this paper despite its shortcomings, because no substitute term has yet been given broad acceptance by the dental profession.

dental school teaching, the quality and extent of the pre-professional preparation, and, perhaps most critically of all, in the examples, for better or worse, set by practicing dentists. Students of operative dentistry, whether at the undergraduate or the graduate level, require the same enlightened, scholarly instruction, the same inspiration as do students in any exacting field. Indeed, these are the very facts which make high quality teaching by devoted teachers the more necessary. The day-to-day practice of operative dentistry in its fullest extent is no place for the indifferent, the complacent, the unobservant, the casual.

A teaching objective of first importance should be the cultivation of a thinking pattern or fundamental attitude within the dental student and recent graduate wherein the practice of operative dentistry is regarded as a clinical discipline whose major aim is that of preserving the human dentition in health and function with an emphasis on prevention.

In this context, the technical procedures involved in achieving this difficult and often elusive objective become means rather than ends in themselves. In cultivating an outlook within the student based upon such a concept, technical procedures assume a planned relationship to the dynamics of function rather than a chance relationship, or worse, no relationship at all. It will be seen, moreover, that every procedure must be predicated upon basic biological and physical principles if it is to serve its ultimate purpose: preventing, arresting or correcting a progressive disease process; specifically, the most prevalent disease in this country. It is this marriage of biological and physical precepts in the treatment of disease, one utterly dependent upon the other, requiring a degree of technical skill for their expression in therapeutics, which is the quintessence of that area of dental practice embraced by the term "operative dentistry."

The operative dentist must be skilled, resourceful, perceptive; he must be able to translate a preconceived mental image into visible reality. while the ability to do this represents no mean accomplishment in itself, yet, unless the practice of this hard-won ability is related to the treatment needs of the total patient and the uncompromising demands of function, it represents the skill of an artisan and nothing more. In no other single sphere of dentistry are the skills and knowledge of other dental specialties so sharply focused as they are in the practice of operative dentistry.

Perhaps the best example of this interdependence is the relationship between operative dentistry and periodontics. Restoration of teeth to health and function simply cannot be accomplished without a lively, pervading appreciation for and understanding of the meaning of periodontal health. Indeed, the alert operative dentist is in a position to recognize, intercept and prevent a high proportion of periodontal disease if he is practicing operative dentistry in its fullest sense.

Likewise, and no less importantly, the operative dentist must cultivate within himself a keen sensibility for pulpal response to mechanical operations on the teeth if he hopes to attain a measure of success in achieving the aim of his practice. To the same degree that he learns to respect and to understand

the nature and reactivity of the dental pulp in response to a great multiplicity of operative procedures to that same degree and no more, he will also prevent pulp pathosis or establish a favorable climate for its resolution, when it is not already irreversible. The most expert operator will fail in his labors to restore teeth to health and function, however well-intentioned his efforts, unless he has subordinated the execution of operative procedures to a basic and discerning comprehension of the underlying requirements and limitations imposed by the dental pulp.

In the field of orthodontics, the operative dentist must ever be on the alert to recognize actual as well as latent orthodontic problems during growth, some requiring treatment, some not. Important as this function of recognition and interception is, and while many operative dentists have spared their young patients much hardship and anguish in later life, through timely referral, still many others have let countless young patients grow into adulthood with never a word of warning of impending functional or cosmetic problems related to tooth alignment, occlusion and jaw relationships.

Probably all dentists have recoiled inwardly, at one time or another, at the question, "Are you a doctor or a dentist?" If the reasons for this tacit distinction in the lay mind were sought out, one of them would most certainly turn out to be the restricted concern of some dentists with the execution of technical operations upon individual teeth. Sometimes it would almost seem that the dentist has forgotten that a living human being is attached to the tooth upon which he may be operating. Moreover, preoccupation with the development of speed in operating can easily blur and disorient the over-all perspective. This is not to say that cultivation of technical skill and expeditious operating practices is undesirable—quite to the contrary. Both attributes are among the hallmarks of any good dentist.

When we lose our concern for people and become distracted by the acquisition of operating speed for its own sake, and when we confine our vision to the teeth alone, out of context with the treatment needs of the patient, we cease being dentists in the doctoral sense and become technicians, apparently unaware of our real objectives. Far from decrying the attainment of excellence in the efficient execution of the technical phases of operative dental treatment, a philosophy of, or approach to, clinical practice wherein technic is a means to an end, rather than the end in itself, cannot help yielding a quality of practice in which the tangible and visible product not only is more perfect in a technical sense, but also serves a genuinely therapeutic purpose. This is the point at which "fillings" become restorations.

As the practice of dentistry becomes more complex year by year, the challenge to the operative dentist becomes ever more exigent. New knowledge, new and improved technics, new attitudes all must be studied and evaluated and then selectively incorporated into one's practice. It is up to the operative dentist to lift the theory and practice of operative dentistry to new heights of achievement and service not only within the dental profession but in the total community as well. How well or how ill the operative dentist does this will largely determine the image of all dentists and of dentistry in society. Here

lie the real answers to the dilemma of the operative dentist; only he can decide whether he is practicing operative dentistry by choice or by default.

* * * * * *

## Technic for Removal of Mandibular Unerupted Third Molars

Robert J. Gores, DDS. J Oral Surg 20 (6): 12/466, November 1962.

The fundamental surgical problem in the removal of any impacted tooth is to provide sufficient space in bone to deliver the tooth either in whole or in part.

The primary objective of any kind of operation is to perform the procedure successfully, skillfully and as rapidly as consistent with good technic and with minimal trauma to adjacent and contiguous tissues. Preoperative planning and diagnosis are absolutely essential, and if the operator is not confident that the outcome of the operation will be successful in a reasonable amount of time, he is far better off to refer the patient to someone who is doing that type of surgical procedure regularly. If a dentist begins an operation and cannot finish it, or if he hurts the patient or takes an unreasonable amount of time in completing the operation, the patient loses confidence in the dentist and, consequently, the patient-dentist relationship becomes strained. On the contrary, if the dentist recognizes his limitations and refers the patient to a competent exodontist or oral surgeon, the patient's relationship with the referring dentist is enhanced and strengthened.

* * * * * *

## Personnel and Professional Notes

Antarctic Dental Officer Celebrates Dental Corps Anniversary. A reception in honor of the 50th Anniversary of the Naval Dental Corps was held 11 October 1962, by the southernmost dental officer in the world, Lt Ronald J. Koss, DC, USN. Lt Koss was host to the officers and scientific personnel at McMurdo Station and Scott Base, Antarctica.

McMurdo Station, the Navy's central support station for Operation Deep Freeze, is located on Ross Island at the edge of the Ross Ice Shelf in McMurdo Sound. Ross Island is the site of Antarctica's only active volcano—13,750-foot-high Mount Erebus—and the headquarters for explorative expeditions by early 20th century British scientists, Sir Ernest Shackleton and Capt Robert F. Scott.

Distinguished guests included: Rear Admiral David M. Tyree, Commander, Naval Support Forces, Antarctica, and Commander, Task Force 43; Rear Admiral James R. Reedy, prospective task force commander; and Commander Ronald K. McGregor, Commander, Antarctic Support Activities.

The Naval Dental Corps has maintained a dentist in Antarctica since Operation Deep Freeze I in 1956. The single dentist stationed at McMurdo

Station is responsible for the dental health of all U. S. personnel in Antarctica. While his practice does not serve as many personnel as some elsewhere in the world, it covers one of the world's largest, coldest, and remotest areas—nearly 5.5 million square miles.

During Operation Deep Freeze 1962 dental treatment was given to members of all components of Task Force 43. One of Dr. Koss' unexpected patients was a Russian member of a two-plane party bound from Russia to the Soviet base at Mirny, Antarctica. The planes spent Christmas Eve and Christmas Day at McMurdo.

The 10 by 25 foot dental department at McMurdo is fully equipped to perform all phases of dentistry in a combination one chair operating room-laboratory. Extensive laboratory work, however, is somewhat restricted because of water and space limitations. Patients express amazement when they see the variety of new equipment available, including the air turbine handpiece.

Dr. Koss is a graduate of the University of Michigan School of Dentistry. In October 1961 he arrived at McMurdo Station, Antarctica, where he has served during the Antarctic summer and winter.

At the Dental Corps reception Dr. Koss said, "Meetings of the Antarctic Dental Society were a little lonely this year, as I was the only dentist on the continent. However, the Society will hold its annual convention upon the arrival of Lt Paul C. Lehman, DC, USN, who will be the Deep Freeze Dental Officer."

Dr. Koss will be assigned to the U. S. Naval Medical Research Laboratory, U. S. Naval Submarine Base, New London, Connecticut.

NH Oakland Dental Officers Host Dental Meeting. Capt Paul W. Suitor, Chief of the Dental Service at U. S. Naval Hospital, and members of his staff were hosts at the 2 October meeting of the Alameda County Dental Society.

On the agenda for the get-together at the hospital Officers' Club were a social hour, dinner, table clinics and professional papers presented by members of the hospital staff.

"Facial Impression Techniques" was the subject of the clinic conducted by Lt Paul B. Menges. "Mechanical Mixing of Silicate Cements" was the subject of another conducted by Lt Larry L. Nash.

Papers presented were "Clinical Examination"—Lt Nash; "Surgical Correction of Dentoalveolar Defects Prior to Prosthesis"—Lt Sherman Spatz; and "Soft Tissues in Denture Support" by Capt Kenneth J. Hall.

Ninety-two dentists attended the meeting.

Newly Standardized Dental Items.

| FSN | Nomenclature | Unit Issue | Price |
|---|---|---|---|
| 6520-721-6287 | Bur, Dental, Excavating, Angle Handpiece, Tungsten Carbide, No. 2, 6's | Pg | 2.50 |
| 6520-817-2647 | Holder, Matrix Wedge, Dental, Contra-Angle | Ea | 2.75 |

# PREVENTIVE MEDICINE

## Be Alert for Smallpox!

The World Health Organization reported 30% more cases of smallpox throughout the world in 1961 than in 1960 (79,349 compared to 58,271). An important difference in the 2 years was the increase in the number of European foci caused by cases imported by air.

In 1962, the United States has come dangerously close to having its first local case in over a decade. The nearest case of smallpox is only a third of a day away by commercial jet aircraft. The mild form of the disease is notoriously similar to chickenpox in its early clinical features. A case may come in contact with dozens of unidentified individuals before a diagnosis is established. In some instances, the diagnosis is first made when the physician who examined the initial case contracts the disease.

There is no place for sloppiness and laziness in performing and reading smallpox vaccinations. To err is to invite preventable tragedy. BUMED Instruction 6230.1C, "Prevention and Control of Communicable Diseases of Man—Immunization requirements and procedures," of 5 September 1962, a revision of BUMED Instruction 6230.1B, makes a major change in the vaccination procedures for smallpox in that all reading will be done on the 7th (seventh) day. Failure to observe some reaction at the vaccination site is evidence of unsuccessful vaccination. Remember, primary vaccinations have been observed in individuals who have had over a dozen unsuccessful takes.

BUMED Notice, 6230, Subj: Smallpox immunization of certain civilian employees, of 24 September 1962, requires vaccinations for civilians with greater risk of exposure to smallpox than the population as a whole. The background discussion has general application. (CommDisBr, PrevMedDiv, BUMED)

* * * * * *

## Diphtheria

Texas State Department of Health, Weekly Morbidity Report, 20 October 1962.

Diphtheria in the United States still occurs, though infrequently. The following table shows the 1962 cases in Texas. Of the 54 cases to date, only one had received the full series of vaccinations. The importance of early and

complete vaccination against diphtheria, pertussis, and tetanus cannot be overstressed.

Booster immunizations during childhood, too, must not be neglected since levels of protection decrease following initial immunization in infancy.

Section 16 of BUMEDINST 6230.1C "Prevention and Control of Communicable Diseases of Man-Immunization Requirements and Procedures," 5 Sep 1962, gives current recommendations for DPT and other pediatric immunizations.

Diphtheria by Age and Vaccination Status, Texas, 1962
(From Epidemiological Reports on 54 of the 74 Reported Cases)

| Age | O-V | I-V | F-V | UNK | Total | % |
|---|---|---|---|---|---|---|
| 0-4 yrs | 15 | 1 | 1 | - | 17 | 31. |
| 5-9 | 19 | - | - | 2 | 21 | 39. |
| 10-14 | 10 | 1 | - | - | 11 | 20. |
| 15-19 | - | - | - | - | 0 | 0. |
| 20-29 | - | 1 | - | - | 1 | 02. |
| 30 & over | 4 | - | - | - | 4 | 08. |
| Total | 48 | 3 | 1 | 2 | 54 | 100. |

Note: O-V, no immunization; I-V, incomplete immunization; F-V, fully vaccinated; UNK, unknown.

(PrevMedDiv, BuMed)

* * * * * *

## Revised General Order No. 20

The attention of all Medical Department personnel is invited to the revision of General Order No. 20, entitled, "Medical and Agricultural Foreign and Domestic Quarantine Regulations for Vessels, Aircraft, and Other Transport of the Armed Forces," which was signed by the Secretary of the Navy on 12 May 1962.

This general order supersedes General Order No. 20 of 15 July 1957. The quarantine regulations contained therein have been approved by the Armed Forces and are applicable to the Army, Navy, and Air Force.

Major changes or additions have been made in the following sections: Predeparture and preembarkation requirements of vessels; quarantine responsibilities of aircraft commanders; procedures to prevent aircraft dissemination of disease vectors and pests; importation of plants, animals, and infectious agents; and interstate movement of etiologic agents.

Careful reading of this revised general order will prevent such embarrassing moments as being denied free pratique when returning from overseas or having postal authorities refuse valuable specimens for lack of the proper permit. (CommDisBr, PrevMedDiv, BUMED)

## Revised Booklet: Immunization Information for International Travel

The "Immunization Information for International Travel (PHS No. 384), 1962 Edition," has been revised by the Foreign Quarantine Division, Public Health Service, Department of Health, Education, and Welfare, reflecting changes since June 1961. The 1961 Edition of the booklet and addenda should be destroyed.

Copies of the booklet may be obtained from the local Public Health Service office, or from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 35¢ a copy with a 25% discount for 100 copies or more delivered to the same address.

Changes in immunization requirements are reported under item "International Notes-Quarantine Measures" in the Weekly Morbidity and Mortality Report, published by the Communicable Disease Center, PHS, Atlanta 22, Georgia. This report may be obtained by direct request to that office to be placed on the mailing list. (CommDisBr, PrevMed Div, BUMED)

* * * * * *

## New Antimalarial: C1501

Public Release, HEW-V60, 1 November 1962: U. S. DHEW, Public Health Service, National Institutes of Health, Bethesda 14, Md.

At the meeting of the American Society of Tropical Medicine and Hygiene, held at Atlanta, Georgia, on 31 October - 3 November 1962, Dr. G. Robert Coatney of the National Institutes of Health, reported on the remarkable initial success with the new experimental drug, designated as C1501, and on the results of clinical trials of this long lasting antimalarial, which thus far has been protective nearly 10 times longer than conventional suppressives.

A single injection of this new drug, C1501, given to volunteers nearly a year ago is continuing to protect them from malaria induced by heavily infected mosquitoes which have been allowed to bite them at monthly intervals. Other volunteers not given the drug invariably come down with malaria after being bitten by these mosquitoes.

Developed by scientists at Parke, Davis & Company, Ann Arbor, Michigan, C1501 is an experimental drug, not yet available for general use. It was supplied by the company to Dr. Coatney and his associates, Drs. Peter G. Contacos, Harvey A. Elder and Mr. John W. Kilpatrick for clinical testing with volunteer patients. Parke, Davis & Company investigators and scientists at Christ Hospital Institute of Medical Research, Cincinnati, Ohio, also reported to the meeting on laboratory and animal work with the new antimalarial.

The new drug C1501 is a pamoic acid salt of the base 4, 6-Diamino-1-(p-Chlorophenyl)-1, 2-Dihydro-2, 2-Dimethyl-s-Triazine. Eleven years

ago this base was reported to be formed in the body from the antimalarial drug Chlorguanide.

If the promise of initial trials in volunteers is borne out under actual field conditions, the C1501 compound should greatly increase the chances of success in worldwide malaria eradication efforts. The United States plays a major role in the program to eliminate this disease, which afflicts 200 million people and kills 2 million each year.

Dr. Coatney, Chief of the Laboratory of Parasite Chemotherapy, National Institutes of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, Maryland, and his associates, conducted the trials, in about 50 inmate volunteers, at the U. S. Penitentiary, Atlanta, Georgia.

The first injections of the new antimalarial were given 24 November 1961, to 5 volunteers. The drug was injected intramuscularly at a dosage of 5 milligrams per kilogram of body weight. Within 2 months, 25 additional volunteers received the drug. Most were bitten by heavily infected Anopheles quadrimaculatus mosquitoes about a week after the suppressive injections, but a few were not challenged until as late as 5-1/2 months after being given the protective drug.

Of 10 volunteers in the first 2 groups, for example, 2 were bitten once, 8 twice, 6 three times, 4 four times and 2 eight times, at approximately monthly intervals. Each had received only 1 injection of C1501. Yet, none of these people have developed any evidence, clinical or parasitological, of malaria. Meanwhile, other volunteers serving as controls and not given the drug invariably came down with malaria when bitten by the same mosquitoes. They were treated with conventional antimalarial drugs, such as amodiaquine.

When the new drug was used experimentally to see if it would be curative in patients with malaria, symptoms disappeared and an apparent cure was effected. However, it is too soon, the investigators believe, to say that the drug will be therapeutically effective as well as protective. It is entirely possible that the new antimalarial eliminates the parasites before infection can take root. Studies of this point are underway but are not complete. The scientists believe that the chemical when injected is held in the intramuscular tissues, where it releases its effective materials into the circulating blood to be carried to every part of the body.

Whether the parasites, which typically form a reservoir in liver cells, are actually killed remains to be determined. No toxic effects have been observed during these studies.

In a separate investigation, a slightly different form of the drug has been tried on 9 volunteers. However, one of them came down with malaria 169 days after the original challenge by the infected mosquitoes. He had been challenged on the 6th day and again on the 79th day after receiving the drug. None of the volunteers injected with the original formulation has shown any evidence of malaria infection. As of 24 October 1962, volunteers in the first group had been free of any evidence of malaria for 333 days.

The preliminary results are termed "spectacular" by some of the investigators, but they caution that it remains to be determined whether these results will be borne out under actual field conditions in malarious areas.

## The Incubation Period of Schistosoma mansoni in Man

J. H. Walters and V. R. Mody, Trans Roy Soc Trop Med Hyg 56(4): 250-251, May 1962.

The prepatent period of development of Schistosoma species in man can rarely be gauged accurately, though the stages of development and their timing have been studied in detail in the experimental animal, especially in the mouse by Standen (1953, and in press).

A recent example of Schistosoma mansoni infection with a development phase in the human body occupying 55 days occurred in a general practitioner living in South London, who had never visited an endemic zone until he went on a holiday to East Africa in December, 1960. On 17 December 1960, he arrived by air at Entebbe, Uganda, and spent the night of 18 December in a permanent camp in the Murchison National Park, where he took a cold bath in water which he was told had been freshly pumped from the Nile. The next night he noticed itching and an irritant papular rash, with slight vesiculation over his trunk and left arm.

On 10 February 1961, 55 days after the presumptive day of infection and 2 weeks after his return to London, he developed fever with diarrhea and noticed that his stools contained blood and mucus. He was examined by the authors on 16 February 1961. On this day, he was febrile and ill, and produced a temperature chart which showed that he had been running an irregular low pyrexia up to 101.4° since 10 February 1961. He had had a cough for several days. On abdominal palpation, the liver was found to be enlarged to 2 fingers' breadth below the right costal margin; it was soft, tender but regular in outline. The tip of the spleen could just be felt; the pelvic colon was tender on palpation. At sigmoidoscopy, the mucous membrane was seen to be edematous and hyperemic, and punctate haemorrhages appeared after pressure. Biopsy specimens of rectal mucosa showed many viable ova of S. mansoni; scanty ova were being shed into the stools. The blood showed an absolute eosinophilia of 1,290 per c.mm, and the schistosomal complement-fixation test was positive. The urine was entirely normal.

The patient received a course of sodium antimony tartrate, by intravenous injection to a total of 25-1/2 grains, after which the stools became free from ova, the liver receded to the costal margin, the spleen became impalpable and the eosinophil count fell to 1,027 per c.mm.

In a series of experiments on the mouse, Standen (1953, and in press) has shown that after penetration of the epidermis the cercariae (now termed schistosomules) burst into the subcutaneous lymphatics within 30 minutes and travel slowly to the regional lymphatic glands where their concentration reaches a peak on the fifth day after infection. Passage via the thoracic duct to the right side of the heart and thence to the lungs (where a marked inflammatory response is evoked) takes an additional 5 days or so. Though the route taken thereafter is unproved, the majority of the schistosomules reach the liver, but may have to make several passages of the circulation before

doing so. During this time a few of their number may be arrested and develop at exotic sites. At the elective site within the capillaries of the portal tracts development rapidly takes place, the male reaching maturity about 20 days after entering the body of the host, the female requiring 28 days. Pairing and copulation appear to provide the stimulus which leads the male to carry his mate against the blood stream into the finest branches of the inferior mesenteric veins, where oviposition begins.

The development cycle in the mouse, therefore, requires a minimum of 28 days; but in man, with a thicker epidermis and far more lengthy lymphatic and blood vessels to traverse, this cycle must inevitably be more protracted. The personal observations of the physician-patient here reported suggest that in this case the period which elapsed from infection to the arrival of sufficient ova in the colonic mucosa to cause appreciable irritation was 55 days. No phase of respiratory symptoms indicative of transit through the pulmonary capillaries was appreciated, and the significance of the cough at the time of presentation, when the lungs were radiologically normal, is uncertain.

* * * * * *

## Aedes Aegypti in the Americas

"Resolution XXXI" Status of Aedes Aegypti Eradication in the Americas, The XVI Pan American Sanitary Conference, Minneapolis, Minnesota, 21 Aug-3 Sep 1962. Pan American Sanitary Bureau Weekly Epidemiological Report XXXIV (44), 31 Oct 1962.

On examination of the report of the Director on the Aedes aegypti eradication campaign in the Americas, it was noted that it had been 15 years since the decision was taken by the First Meeting of the Directing Council of the Pan American Health Organization, Buenos Aires, 1947, to undertake a continental program to eradicate Aedes aegypti, and that many areas are still infested with the Aedes aegypti mosquito, and constitute potential and actual source of reinfestation for those areas and countries that have eradicated the vector.

The reports noted the increasing insecticide resistance and the sporadic introduction of tardily-recognized cases of jungle yellow fever into aedes-infested urban areas.

The Conference, bearing in mind the programs that certain Governments are carrying out and the intention expressed by others of undertaking Aedes aegypti eradication, resolved:

1. To invite the Governments of those countries and areas in which the vector has been eradicated to maintain active surveillance programs in order to prevent reinfestation.

2. To express its satisfaction with the progress achieved in the current eradication campaigns of certain countries which makes it possible to foresee the elimination of this vector from their territories in the near future.

3. To call on the Governments of countries and areas still infested with Aedes aegypti to give the highest priority to provision of necessary funds, personnel, and materials for completion of their eradication campaigns.

4. To request the Director to exert all appropriate efforts to intensify and accelerate the Aedes aegypti eradication campaign in order to achieve the goal of eradication at the earliest possible date.

(Approved at the ninth plenary session, 2 September 1962)

Eradication campaigns are proceeding with varying degrees of success in Colombia, Cuba, Dominican Republic, Venezuela, Antigua, Netherlands Antilles (Curacao, Saba, St. Eustatius, and St. Martin), Barbados, British Guiana, British Virgin Islands, the Grenadines, Martinique, and St. Lucia.

There is no campaign against the vector in Haiti, Jamaica, United States, Bahamas, Cayman Islands, Dominica, Guadeloupe, Puerto Rico, the island of Anguilla, Surinam, Turks and Caicos Islands, or in the U. S. Virgin Islands.

* * * * * *

## Rabies Transmission by Nonbite Route

D. G. Constantine, Public Health Reports, U. S. PHS, DHEW 77 (4):287-289, April 1962.

Two men who entered Frio Cave, a large limestone cavern near Uvalde, Texas, where rabid bats had been identified, subsequently died, 1 in 1956, the other in 1958, of laboratory-confirmed rabies. The fact that both men denied knowledge of having been bitten by bats or other mammals suggested the possibility of some mode of rabies transmission other than by bite, at least under the atmospheric conditions in Frio Cave or in caves similarly inhabited by millions of bats. To test this hypothesis the experiments described in the present article were undertaken in 1960-1961. In these experiments several varieties of wild carnivores, as well as domestic dogs and cats, were exposed in cages for periods of 7 to 30 days, and efforts were made, particularly in the third experiment, to exclude all possibility of their being bitten by wild animals or arthropods. Before exposure, all the animals except 2 had been caged in isolation for 6 to 20 months and their sera proved to be negative for rabies antibody by the serum-virus neutralization test.

From these animals virus was isolated and proof of its identity as rabies virus was established by the serum-virus neutralization test. In the author's view the findings "support consideration of an air borne medium, such as an aerosol, as the mechanism of rabies transmission in this instance."

* * * * * *

One patient in four entering a U. S. mental hospital is admitted at his own request. Voluntary admissions rose from 16 percent to 24 percent between 1956 and 1961. In England more than 70 percent of mental hospital admissions are voluntary. (US DHEW PHS Public Health Reports 77(9): 772, September 1962)

## - Know Your World -

Did you know:

That most shark attacks on humans are attributed to individual "killers" which develop by accident or environment, an apparent liking for human flesh? [1]

---

That warming the waters harboring mosquito eggs can turn a potential male into a harmless and incomplete "female," minus the power to suck blood and produce eggs? [1]

---

That the human body is able to withstand high acceleration crashes provided the body is suitably restrained? [2]

---

That a gelatin material frozen in polyethylene bags to a temperature lower than ice, but not low enough to freeze the fish, is being used to overcome the bulk and melting problems of ice in the air transportation of fish? [2]

---

That U. S. Army chemists have developed an analytical method to detect deadly nerve gases which can be used to spot poisonous compounds, such as insecticides and industrial chemicals, in the human body?

The test detects organophosphorus compounds (widely used as insecticides and petroleum additives) that may poison the body by interfering with the proper passage of nerve impulses to the muscles. Equipment is used in which the body chemical cholinesterase acts on another chemical to cause a voltage drop in an electric circuit. Presence of a nerve gas disrupts this action much as it disrupts nerve impulses in the body. Rate of voltage drop is reduced; reduction is a direct measure of amount of nerve gas present. Test is accurate to one percent. [3]

---

That the cockroach is now being considered in the transmission of infectious hepatitis? In California a 712 unit housing project has been a focus of hepatitis. In 1959, 32% of its residents suffered from the disease. About that

time, a successful roach control program was instituted in the project. During the following 2 years, infectious hepatitis incidence dropped to 3%, while during the same period hepatitis cases in surrounding Los Angeles County more than doubled.[4]

---

That the Belem Virus Laboratory, Brazil, has reported the isolation of the virus of yellow fever from 2 pools of mosquitoes Haemogogus sp. captured at 2 localities along the Belem-Brazilia highway in the Municipio of Capim, State of Para? The captures were made on tree platforms in the forest on 6 June 1962 and on 28 and 29 August 1962.[5]

---

That the first commercial consignment of attenuated live vaccine was flown to Johannesburg on 16 August 1962 to combat African foot-and-mouth disease?

The vaccine, developed by the Animal Virus Research Institute at Pirbright, and supplied by Burroughs Wellcome, is for use on the cattle ranches of Southwest Africa. It costs less than 20¢ a dose, and each dose gives 12 months' protection; by contrast, the more expensive killed vaccine gives only 3 months' immunity.

The outbreak of African foot-and-mouth disease in the Middle East has prompted the producers of the vaccine to step up its output. But a start on the large-scale vaccination program to attempt to contain the disease cannot be made until the Food and Agriculture Organization of the United Nations has found the necessary funds.[6]

---

That the World Health Organization of the United Nations has predicted that leprosy, which now afflicts one out of 100 Africans, can be vanquished in the next generation? Sulfonamide treatment will cure all African lepers, except those in the body-wasting stage of the disease.[7]

---

That lizards may play a role in the natural history of Eastern Equine Encephalitis virus (EEE)? Substances which inhibit hemagglutination by an EEE virus antigen were found in the sera of wild lizards caught in the savannah along the Pacific coast of Panama. These serum inhibitors are believed to be specific antibodies.

They were consistently found in the serum of lizards experimentally infected with EEE virus. Sera from 246 lizards of 2 families and 4 genera were tested by hemagglutination inhibition. Evidence of past infection with EEE virus in the form of HI antibody titers of 1 in 80 or greater was found in 13% of lizards of the family Teiidae (Ameiva sp. and Cnemidophorus sp.) and 30% of Basiliscus sp.[8]

That in the Tai-Meo district, North Vietnam, Anopheles minimus is prevalent in the mountains at altitudes up to 1,300-1,500 meters, where suitable breeding conditions are available?

Local foci of malaria were found at altitudes from 100 to 1,200-1,300 meters and were represented by hyperendemic (altitude 800-900 meters) and hypoendemic areas (altitudes from 900-1,000 to 1,200-1,300 meters). The hyperendemic zones are situated in the river valleys and on the adjoining mountain slopes, while the hypoendemic zones are on the plateau.[9]

---

That an outbreak of febrile illness developed in Singapore in June 1960, and continued until November? The main symptoms were headache, backache, aches and pains, lymphadenopathy, nausea, vomiting and morbilliform rash: in about one-third of the patients the rash was petechial. There was no bleeding but 63% had platelet counts under 100,000 per cmm. The patients were mainly young adults and there were no deaths.[10]

---

Bibliography

1. Science News Letter, 82: No. 11, 171-172, 15 Sep 1962
2. Science News Letter, 82: No. 9, 132, 1 Sep 1962
3. Industrial Research News Letter, Armour Research Foundation of Illinois, Institute of Technology, Technology Center, Chicago, Aug 1962
4. Tropical Medicine and Hygiene News; The American Society of Tropical Medicine and Hygiene, 11: No. 3, 4, June 1962
5. Weekly Epidemiological Report, Pan American Sanitary Bureau, Vol. XXXIV, No. 44, 224, 31 Oct 1962
6. The Lancet, II: No. 7252, 411, 25 Aug 1962
7. Science News Letter, 81: No. 25, 389, 23 Jun 1962
8. American Journal of Hygiene, 76: No. 1, 82-87, July 1962
9. Tropical Disease Bulletin, Bureau of Hygiene and Tropical Diseases, 59: No. 8, 760, 1962
10. Tropical Disease Bulletin, Bureau of Hygiene and Tropical Diseases, 59: No. 8, 775, 1962

* * * * * *

Seven cases of retarded bone growth and arrest resulting from excessive doses of vitamin A have been reported by Dr. Charles M. Pease, Children's Memorial Hospital, Chicago. He says overdoses of vitamins can cause irreparable damage to cells in the cartilage of bones and prevent bones from growing to their full length.

(US DHEW PHS Public Health Reports 77(9): 772, September 1962)

# RESERVE SECTION

Announcement of Discontinuance

Correspondence Course

NAVPERS 10701-A

Medical Department Officer Correspondence Course Atomic Medicine, NavPers 10701-A is discontinued. All personnel who are presently enrolled in NavPers 10701-A will be allowed to complete the course. Major revision of NavPers 10701-A is in process of preparation.

* * * * * *

## Retirement Regulations Outlined for Reservists*

Looking forward to retiring with pay after completing your 20 years of satisfactory federal service? Quite a few Reservists are nearing the 20-year mark but aren't quite certain about some of the ifs, ands, and buts in the complex retirement regulations.

Here is a roundup of information on Naval Reserve nondisability retirement, based on the latest laws and regulations.

The principal authority for nondisability retirement is still Title 10, U. S. Code. Section 1331 of this law provides that you—as a Naval Reservist—may retire with pay when you reach age 60, provided you have completed a minimum of 20 years of "satisfactory federal service" and meet certain other requirements.

Who's Eligible? —If you have completed 20 years of "satisfactory federal service" (as defined elsewhere in this article), as a commissioned officer, warrant officer, nurse, flight officer, aviation cadet, or enlisted member in any branch of the Armed Forces or their Reserve components, you are eligible—upon application—to receive retirement pay upon or after reaching age 60, subject to the following requirements:

1. Your last 8 years of qualifying service must have been served as a member of a Reserve component. These 8 years, however, do not have to be continuous.

2. You must not be eligible for—or receiving—any other retirement pay for military service.

3. If you were a member of a Reserve component before 16 Aug 1945, you must have served on active duty during a portion of one of the following periods: 6 Apr 1917 to 11 Nov 1918, 9 Sep 1940 to 31 Dec 1946, or 27 Jun 1950 to 27 Jul 1953.

Any Reservist who meets the age and service requirements is eligible. Any former member who met the service requirements before separation from the service under honorable conditions is eligible to apply for retired pay upon reaching age 60.

Applications should be submitted 6 months before you become eligible to retire.

What Service Is Creditable? —Service in any component of the Armed Forces (including aviation cadet service performed after 15 Apr 1935) is creditable except the following:

1. Inactive and/or nonfederally recognized status of the National Guard and Air National Guard.
2. Inactive Reserve Section of the Officers Reserve Corps.
3. Inactive Officers Section of the Air Force Reserve.
4. Honorary Retired List after 30 Jun 1949 or Retired Reserve, unless this service was on active duty.
5. Service in the Public Health Service or temporary Coast Guard.
6. Naval Militia service is creditable only between 16 Feb 1914 and 1 Jul 1918. National Guard service is creditable after 21 Jan 1903.

Service as a midshipman or cadet under appointment made on or before 4 Mar 1913 is creditable for retired pay purposes but is not creditable in establishing eligibility for retirement.

Time on the Inactive Status List (ISL) does not count for retirement purposes but is creditable in determining rate of basic pay.

All service performed before 1 Jul 1949—with the foregoing exceptions—is creditable for Reserve retirement with pay. On and after 1 Jul 1949, Reservists must earn 50 retirement points each "anniversary year" in order to have that year count as a year of "satisfactory federal service" for retirement purposes.

How Are Retirement Points Earned? —Retirement points are credited to Reservists as follows:

1. One point for each day of active duty or active duty for training (ACDUTRA), including travel time.
2. One point for each authorized drill attended in either pay or nonpay status.
3. One point for each period of equivalent instruction or appropriate duty performed as authorized by your commandant or the Chief of Naval Personnel.
4. Points are credited upon satisfactory completion of authorized correspondence courses. The point credit varies in accordance with the course completed. For officers, these retirement points are credited as follows: For courses evaluated at more than 12 retirement points, credit will be granted on satisfactory completion of (1) each 12-point unit of the course and (2) the

final unit, which may be less than 12 points. Credit applies as of the date the last satisfactory assignment of each unit is mailed. Thus, with a 15-assignment course evaluated at 30 points (two points per assignment), credit would be granted on satisfactory completion of (1) the first 6 assignments, (2) the second 6 assignments, and (3) the last 3 assignments. Where the evaluation of each assignment does not permit dividing a course into 12-point units, the course will be divided into units greater than 12 points, but as close as possible to 12. For example, a course evaluated at 9 points per assignment will be divided into 18-point units. (Officers will not receive retirement credit for completion of Enlisted Correspondence Courses.)

For enlisted Reservists completing either Officer or Enlisted Correspondence Courses, credit will be granted only upon satisfactory completion of the entire course. The points for each course will be credited to the Reservist as of the date the assignment is completed, but only after satisfactory completion of the entire course. The date an assignment is considered completed is the date on which the assignment is mailed by the enrollee. After 1 Jan 1963, credit will be granted in the same manner as for officers.

Retirement credit will not be given for completion of correspondence courses while on active duty or training duty, or as part of an authorized drill or NROS class.

"Gratuitous Points"—Fifteen points are credited for each year of membership in a Reserve component, except when on the Inactive Status List or in the Retired Reserve. "Gratuitous points" are no longer prorated according to the amount of active duty or ACDUTRA performed. However, 15 "gratuitous points" are not creditable if a Reservist is on full-time active duty for an entire year.

A maximum of 60 retirement points each year may be credited by means of all but the first of the foregoing items. Points for active duty and active duty for training may be added to this 60-point maximum.

What Is 'Satisfactory Federal Service'?—Effective 1 Jul 1949, a year of "satisfactory federal service" is earned by accumulating a minimum of 50 retirement points during an anniversary year. Before this date, a satisfactory year—or a portion thereof—was awarded for each year, or portion of a year, served in the Armed Forces, including the Reserve components, whether on active or inactive duty. Therefore, if you enlisted in the Naval Reserve on 3 Apr 1942, and maintained your membership continuously, you would be credited with 7 years, 2 months, and 28 days of satisfactory federal service as of 30 Jun 1949. Thereafter, you would have to earn 50 retirement points each anniversary year until you complete 20 years of satisfactory federal service.

What Is an 'Anniversary Year'?—The "anniversary year" for Naval Reservists who were members on 1 Jul 1949 runs from 1 July to 30 June; for those members entering after 1 Jul 1949—or whose Reserve service was broken after that date—the anniversary year extends from the date of entry or reentry.

An entry is considered to be the first appointment or enlistment of a member in the Naval Reserve. In the situation of a Regular Navy officer

resigning from the Navy and accepting an appointment in the Naval Reserve, his anniversary date will be the date on which he accepts his USNR appointment.

A reentry takes place when the member has resigned or been discharged from the Naval Reserve and was not immediately reappointed or reenlisted, or when his Reserve service has been broken by service in a Regular component.

How Do You 'Prorate' Points? — The 50-point requirement for a year's satisfactory federal service may be prorated for a partial year and the 15 gratuitous points are similarly prorated. To prorate, however, the status of the member must change at the end of the period to be prorated. Change of status means resignation, discharge, or transfer to the Inactive Status List or the Retired Reserve.

For example, assume a Reservist has 19 years and 8 months of "satisfactory federal service" on 30 Jun 1962. In order to complete 20 years, he needs 4 months' additional service. To credit these 4 months, he must have 17 retirement points (4/12 times 50), He is given 5 gratuitous points (4/12 times 15), so he must earn 12 points from 1 July to 1 November, and request transfer to the ISL or Retired Reserve, or otherwise be severed, effective 1 November. For each additional month beyond 1 November, he must earn 1/12 times 50 points in order for the service of any part to be creditable.

(to be continued)

*The Naval Reservist - NAVPERS 15653
November 1962

* * * * * *

DEPARTMENT OF THE NAVY
U. S. NAVAL MEDICAL SCHOOL
NATIONAL NAVAL MEDICAL CENTER
BETHESDA 14, MARYLAND

OFFICIAL BUSINESS

Permit No. 1048

POSTAGE AND FEES PAID
NAVY DEPARTMENT